

## **REMARKS/ARGUMENTS**

Applicant has received the Office Action dated September 28, 2007 (hereinafter "Office Action"), in which the Examiner: 1) objected to the specification; 2) rejected claims 1-6 and 27 under 35 U.S.C. § 102(b) as being allegedly anticipated by Cain (U.S. Pat. No. 4,905,233, hereinafter "Cain"); 3) rejected claims 7-26 under 35 U.S.C. § 103(a) as being allegedly obvious over Cain in View of Li et al. (U.S. Pat. No. 6,381,252, hereinafter "Li"); and 4) objected to claims 28 and 29 as being dependent upon a rejected base claim, but otherwise allowable. With this Response, Applicant has amended claims 16, 23, 27 and 29, and canceled claims 17, 18 and 28. Based upon the amendments and arguments contained herein, Applicant believes this case is in condition for allowance.

### **I. OBJECTION TO THE SPECIFICATION**

Applicant previously submitted an amendment to the specification (to correct an inadvertent typographical error) in which the wrong paragraph was identified. Applicant notes that the correction submitted applies to paragraph [0043], not paragraph [0045] of the specification as previously submitted. The corrected amendment to the specification is submitted herein. No new matter has been introduced by this correction. Applicant thus respectfully requests withdrawal of the objection to the specification.

### **II. THE ANTICIPATION REJECTIONS**

In rejecting independent claim 1 as allegedly anticipated by Cain, the Examiner stated, among other things, that Cain teaches "preserving the first link for a subsequent packet having the same flow address as the forwarded packet upon determining a desired load change of the first link is less than a predetermined value (see column 2 lines 36 – 55; packets are forwarded along a virtual circuit in a multinode communications network where the virtual circuit will remain dedicated for the connection between the source and destination until rerouting is required, for example traffic congestion)." Office Action, ¶ 4, pp. 2-3. Applicant respectfully traverses the Examiner's characterization of the cited art,

noting that while the passage cited by the Examiner describes using virtual circuits to route and allocate network traffic, the cited passage does not explain how traffic is allocated, and thus does not teach even suggest a decision regarding “preserving the first link” that is based upon whether “a desired load change of the first link is less than a predetermine value,” as required by independent claim 1.

Applicant respectfully notes that Cain teaches identifying “feasible paths” (*i.e.*, paths with a metric that does not exceed a reference metric), and using the feasible paths “to allocate the distribution of traffic between the source node and the destination node over all the feasible paths in inverse proportion to the path metric of each respective feasible path.” Cain, col. 2, lines 15-20. As a result, “loading of the feasible paths of the network is effectively balanced with minimum average delay.” Cain, col. 2, lines 21-23. Cain thus teaches routing traffic based upon the current loading of a path, such routing being based upon which path has the metric indicative of the lowest delay. Applicant further notes that Cain is merely one of several prior art approaches previously described by Applicant in the Background section of the Application. See ¶ [0002] of the subject application (hereinafter “Application”).

Applicant respectfully notes that independent claim 1, in contrast to such well-known prior art approaches, requires not changing the link if the “desired load change” does not equal or exceed predetermined or threshold value. Applicant further notes that “desired load change” is defined in the Application as generally referring to “the load change needed to balance the loads on each path or link emerging from a router, based upon the load balancing policy in the router.” Application, ¶ [[0031]. Independent claim 1 thus requires not changing the current path or link between a source and a destination (*i.e.*, the flow address) if a change in the traffic loading of the path or link that is required (in order to balance the load within a router) does not equal or exceed a threshold value. Cain does not teach or even suggest routing based on whether the change in traffic loading that would result from a link change meets or exceeds a threshold.

Cain instead teaches routing packets to the path with the lowest delay, regardless of the level of change in load that results from the routing. Further, the routing decision mechanism taught in Cain is based upon the current average delay of each path, which does not reflect the future impact of changing the routing. See Cain, col. 10, lines 66-67 through col. 11, line 1 ("In order to provide processing stability the traffic flow values are preferably averaged over several update intervals.").

For at least these reasons, Applicant respectfully submits that Cain does not teach or even suggest all of the limitations of independent claim 1, and thus does not anticipate claim 1 or any claims that depend upon it. Further, none of the cited art overcomes the deficiencies of Cain. Applicant thus respectfully submits that independent claim 1, as well as claims 2-6 (which depend upon claim 1), are all in condition for allowance.

Regarding the rejection of independent claim 27 as allegedly anticipated by Cain, Applicant respectfully notes that the claim has been amended to include the limitations of dependent claim 28, which has been cancelled. Because the Examiner indicated that claim 28 would be allowable if re-written in independent form, Applicant respectfully submits that amended independent claim 27, as well as those claims that depend upon it, are all in condition for allowance.

### **III. THE OBVIOUSNESS REJECTIONS**

Regarding the rejections of dependent claims 7 and 8 as allegedly obvious over Cain in view of Li, Applicant respectfully notes that because these claims include all of the limitations of independent claim 1, and because none of the cited art, either alone or together, teaches or even suggest all of the limitations of independent claim 1 for at least the reasons presented above, dependent claims 7 and 8 are not rendered obvious over the cited art. Applicant thus respectfully submits that both claims 7 and 8 are also in condition for allowance.

Regarding the rejection of independent claim 9 as allegedly obvious over Cain in view of Li, the Examiner acknowledged that "Cain fails to teach to adjust positions of one or more pointers used to partition traffic flow through a multipath

network, wherein the positions of the one or more pointers are variable relative to a range of hash units that correspond to flow addresses within the multipath network.” Office Action, ¶ 7, p. 5. The Examiner further stated, among other things, that Li teaches “the use of pointers for selecting a channel,” and therefore that “it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the pointers a taught by Li into the multiple path routing mechanism of Cain.” Office Action, ¶ 7, p. 5. Applicant respectfully traverses the Examiner’s characterization of the cited art, noting that although Li does teach the use of pointers to expressly select an individual channel, Li does not teach or even suggest using one or more pointers to partition traffic flow by defining boundaries between ranges of hashed flow addresses (hash units). Although claim 9 does not expressly state that the pointers define such ranges, this is an inherent characteristic resulting from the pointer positioning required by the claim, as is clearly illustrated in Figs. 3a and 3b of the Application and the accompanying description of paragraphs [0034-0035]. Thus, because neither Cain nor Li, either alone or together, teach or even suggest all of the limitations of independent claim 9, the cited art does not render the claim obvious. Applicant thus respectfully submits that independent claim 9, as well as those claims that depend upon it, are all in condition for allowance.

Regarding the rejection of independent claim 16 as allegedly obvious over Cain in view of Li, Applicant respectfully notes that the claim has been amended to incorporate the limitations of dependent claim 17, which has been cancelled<sup>1</sup>. Applicant further respectfully notes that claim 17 was rejected on grounds similar to those presented by the Examiner with regard to independent claim 9. Because independent claim 16, as amended includes limitations similar to those of independent claim 9, Applicant respectfully submits that for at least the same reasons as those presented above with regard to claim 9, amended independent claim 16 is not rendered obvious by the cited art. Applicant thus respectfully

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<sup>1</sup> Dependent claim 18 was also cancelled in order to avoid a potential inconsistency with amended independent claim 16.

submits that amended independent claim 16, as well as those claims that depend upon it, are all in condition for allowance.

Regarding the rejection of independent claim 23 as allegedly obvious over Cain in view of Li, Applicant respectfully notes that the claim has been amended to include limitations similar to those of independent claim 9. Applicant respectfully submits that for at least the same reasons as those presented above with regard to claim 9, amended independent claim 23 is not rendered obvious by the cited art. Applicant thus respectfully submits that amended independent claim 23, as well as those claims that depend upon it, are all in condition for allowance.

#### **IV. CONCLUSION**

Applicant respectfully submits that for at least the reasons presented above, all claims are in condition for allowance. Applicant respectfully requests reconsideration and that a timely Notice of Allowance be issued in this case. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

/Roberto de Leon/

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
Legal Dept., M/S 35  
P.O. Box 272400  
Fort Collins, CO 80527-2400

Roberto de Leon  
PTO Reg. No. 58,967  
CONLEY ROSE, P.C.  
(713) 238-8000 (Phone)  
(713) 238-8008 (Fax)  
ATTORNEY FOR APPLICANT